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FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF THE SECRETARY

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of	)	92-257
	)	
Amendment of the Commission's	)	RM-7956
Rules Concerning Maritime	)	RM-8031
Communications	)	

To: The Commission

COMMENTS OF SEA, INC.

INTRODUCTION

1. SEA applauds the first moves towards reform of

be expected to desire the same categories of communications that they use terrestrially. This means there is likely to be a demand for more sophisticated voice telephony services as well as data services including facsimile, electronic mail, and ASCII data transfer. While it is difficult to predict requirements in detail we believe that it may not be necessary. One approach to accommodating future technology is allow flexible use of the spectrum. This can be achieved by simply putting requirements on the spectrum of the emission without specifying either a technology to be used or the type of information to be conveyed. This has a number of advantages. First it allows marine users to more easily integrate their communications with terrestrial communications. Secondly it allows technology advances to be introduced rapidly into the marine market. Finally it allows communications to be transmitted in the most efficient (in terms of cost and spectrum) manner possible.

3. We recognize that not all emissions can easily coexist on the same channel. For example telephony users would suffer significant annoyance if they were required to share channels with bursty data users. However it would be possible to designate certain channels as flexible use channels. We believe that this could be done without modifying or violating current ITU Radio Regulations. The Radio Regulations have very little to say about the use of MF frequencies (1605-4000 kHz) and in fact do not even give specific frequencies (with a few special exceptions such as 2182 and 2187.5). In the HF band (4000 to

27500 kHz) there are frequency bands allocated for exclusive maritime use which are designated for wideband telegraphy, facsimile, and special transmission systems. In the VHF band (156 to 174 MHz) the Radio Regulations stipulate frequency assignments, modulation (FM) and deviation but do allow for different types of information (such as direct printing or data) on most channels within these constraints. Thus radio users could benefit from additional flexibility on certain channels within all three of these bands.

TRUNKING

4. Trunking generally implies some type of centralized control of the spectrum. Consequently it generally means that the individual users lose some control over their spectrum. In the VHF band channels are already subdivided by function (for example, port operations, intership, noncommercial, etc.) If they are further subdivided into conventional and trunked it will be difficult if not impossible to assign an appropriate number of channels to each category. There simply are not enough channels to do this. Consequently we are not enthusiastic about trunking in the marine VHF band. There may however be good reasons to allow trunking (as opposed to mandating trunking) on an optional basis. This is particularly true if SMR like entities are allowed as discussed below.

DIGITAL SELECTIVE CALLING

5. We have followed the Coast Guard Petition for Rulemaking concerning minimum requirements for digital selective calling in marine radio equipment with great interest, and have participated regularly in RTCM Special Committee 101 discussions on the petition. In addition, as noted in the Notice of Inquiry, we commented on the initial Petition for Rulemaking. As our thoughts on this matter have not changed substantially we will simply summarize our previous comments here and add some additional details.

6. We believe that the proposed VHF minimum requirements will greatly enhance safety when the GMDSS is fully operational in 1999. Furthermore the groundwork will be laid for the introduction of enhancements such as automated telephone service which will benefit everyone in the marine community.

proposal can be made a little more specific as indicated in the following paragraphs.

8. Required transmit capabilities are a distress call, a safety individual call, and a routine individual call. The frequency on which the DSC call is transmitted need not be automatically selected. A distress call will contain:

a) the format specifier, distress, automatically inserted (by selecting this call type)

b) the self ID automatically inserted

c) the nature of distress with undesignated automatically inserted unless some other method is provided

d) the distress coordinates and time that coordinates were last updated. Either an NMEA 0183 bus must be provided or it must be possible to enter coordinates manually. If no coordinates are available 9999999999 is inserted automatically. If the time is unavailable 8888 is inserted automatically.

e) the telecommand indicating subsequent communication by H3E or J3E emission automatically inserted as appropriate to the operation of the radio unless some other entry method is provided

f) end of sequence (EOS) and error check characters to be automatically inserted.

9. A safety individual call will contain:

a) the format specifier, individual station, automatically inserted (by selecting this call type)

b) the destination address manually entered

c) the category, safety, automatically inserted (by

selecting this call type)

d) the self ID automatically inserted

e) the telecommand indicating subsequent communication by J3E emission automatically inserted unless some other entry method is provided

f) the frequency of the associated voice channel automatically inserted unless some other entry method is provided

g) end of sequence (Ack RQ) and error check characters to be automatically inserted.

10. A routine individual call is identical to a safety individual call except the category is routine:

a) the format specifier, individual station, automatically inserted (by selecting this call type)

b) the destination address manually entered

c) the category, routine, automatically inserted (by selecting this call type)

d) the self ID automatically inserted

e) the telecommand indicating subsequent communication by J3E emission automatically inserted unless some other entry method is provided

f) the frequency of the associated voice channel automatically inserted unless some other entry method is provided

g) end of sequence (Ack RQ) and error check characters to be automatically inserted.

11. Required receive capabilities are that any call which may be construed as being directed at the station and with which

the station is able to comply must be received. This includes all distress calls, all all-ships calls, all geographic area calls directed at an area which includes the valid position (a position which has been updated in the last 12 hours) or directed at any area if there is no valid position, and all individual calls directed at the station. The radio need not include the capability of being programmed to receive group calls but if it is so programmed it must also receive these calls. As there is no specification for an automatic/semiautomatic service for MF/HF these calls need not be received. In any case we believe inclusion of these types of capabilities will be market driven. An audible alarm must be provided for any received call. For distress and urgency calls it should not be possible to disable these alarms and the alarm should continue until manually turned off. The alarm for distress and urgency calls should be distinct from other alarms. For any call requiring a change of channel frequency or mode with which the radio is capable of complying, this change should be performed automatically or the required changes should be displayed to the operator. There are no other display requirements. There are no memory or logging requirements.

12. Required acknowledgement capabilities are that any call directed at the individual station and requesting an acknowledgement should be acknowledged. The acknowledgement should be automatically composed and transmitted and if appropriate should indicate unable to comply. There are no

required scanning capabilities nor is any dedicated DSC receiver required. In the minimum implementation a DSC call will not be detected unless it is transmitted on the same frequency to which the receiver is tuned.

NARROWBAND DIRECT PRINTING

13. Narrowband direct printing using the protocol described in CCIR Recommendation 625 has an effective throughput of about 6-7 characters per second under optimum conditions. Many people can both read and type faster than this. It is possible to get higher data rates in the allotted 500 Hz channels. Indeed it is possible to get higher throughput using the same modulation rate by using more sophisticated protocols. We see no reason not to

PRIVATE CARRIERS AND EXCLUSIVE USE

14. SMRs have provided a valuable service in the land mobile industry and there is every reason to believe that similar entities can do the same in the marine industry. In particular they can relieve small entities in the marine industry of the burden of providing their own communications. In addition they are probably better equipped to bring new technology and services into use since the cost can be shared among many users and the motivation is stronger for a company whose business is focused on communications. One disadvantage is that these services would provide heavy competition to the already somewhat beleaguered

INTRA-SERVICE SHARING

17. Intra-service sharing on a secondary basis can relieve congestion without significantly compromising the quality of primary communications.

AUTOMATIC INTERCONNECT

18. People have become accustomed to a highly automated telephone system and the lack of such a system on marine channels is a significant competitive disadvantage. This is particularly true in an era when distress traffic is moving towards automation with DSC. The encouragement of DSC is reason enough to allow automatic interconnect.

NARROWBAND

19. SEA has 9 years of experience developing narrowband equipment for the land mobile market based on ACSB technology. With the recent allocation of spectrum at 220 MHz for narrowband radio the land mobile community will soon be seeing significant benefits from this effort. We believe the marine community could also benefit from this technology. For example if only ten channels in the VHF spectrum were converted to 5 kHz channels

channels which are governed by international agreement. This would be far preferable to moving to narrowband FM which provides inferior performance and lower capacity and would undoubtedly lead to much disruption of the spectrum.

20. It should be pointed out that the Commission may find it difficult to unilaterally convert part of the spectrum to narrowband due to international agreements. Currently the Radio Regulations published by the ITU give a channel plan for the marine VHF band. Furthermore the modulation format for use of these channels is spelled out as FM with 5 kHz deviation. Consequently this issue will probably need to be taken up internationally.

INTER-SERVICE SHARING

21. Inter-service sharing could provide a fairly quick relief for marine congestion on the VHF frequencies and should be implemented. This is particularly true if the Commission intends to allow land mobile use of current marine channels.

AMTS CHANNELS

22. In the 1 MHz band of unused AMTS channels there is probably insufficient bandwidth to operate duplex channels which limits the use of this band for telephony. However some data services could readily operate on simplex channels.

RECLASSIFICATION OF PUBLIC COAST STATIONS AS NON-DOMINANT CARRIERS.

23. The entire marine industry has an interest in maintaining the viability of public coast stations. We believe that this reclassification will further this end.

PRIVATE LAND MOBILE USE OF MARITIME FREQUENCIES.

24. In principle the use of maritime frequencies by land mobile users in regions far from navigable waters seems reasonable although it seems only fair that the interservice sharing proposals discussed above should be covered in the same rulemaking. At a practical level the rules should be more explicit on measures to be taken to prevent interference. For example it would be prudent to insist that the edge of the land mobile base station service area maintain some minimum distance (at least 43 km) from navigable waterways and existing coast stations. In addition a maximum field strength at the edge of the service area should be defined. This would give coast stations a concrete method for avoiding interference.

CONCLUSION

25. While it is critical that safety related communications follow very specific protocols, a great deal of marine

communication is not safety related. This type of communication is best served by a flexible regulatory environment and we believe that this Notice of Inquiry can be the first step in that direction. Accordingly we have supported a number of measures that move towards more flexible use of the available spectrum such as intraservice sharing and a wider variety of data services. Additionally we have supported measures which call for the modernization of the maritime radio service including automatic interconnect and a specific proposals for the implementation of minimal DSC requirements.

Respectfully submitted

SEA, Inc.

by Jim Elder 26 May 1993
Jim Elder
Communications Engineer

CERTIFICATE OF SERVICE

I, Norma E. Rusnak, a secretary for the law firm Verner, Liipfert, Bernhard, McPherson and Hand, Chartered, do hereby certify that a true and correct copy of the foregoing "Comments of SEA, Inc." was delivered by hand, this 1st day of June, 1993, to the following:

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